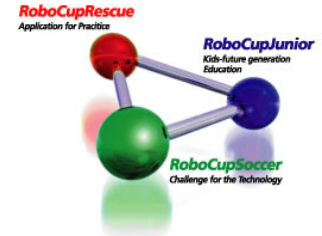




RoboCupRescue Robot League

Rules at a Glance



New This Year:

- Victim placements will be known to the operators and audience prior to missions, and changed each round to ensure complete arena coverage over multiple missions.
- Resets allow fixing/replacing the robot at the start point but loss of accumulated victims, maps, and time.
- GeoTIFF map formats will be used to allow comparison of maps to ground truth arena configurations.
- Best-In-Class awards for autonomy and mobility will be given to robots that find the most victims in the Yellow and Red arenas respectively over all missions.

Arena Features: Yellow, Orange, Red

- Random mazes with non-flat flooring
- Stepfield pallets (Orange: half-cubic, Red: full-cubic)
- Stairs (40° , 20cm riser, 25cm tread depth)
- Ramp (45° to test torque and center of gravity)
- Confined spaces (ceiling blocks under elevated floors)
- Visual acuity (tumbling E eye charts, hazmat labels)
- Directed perception boxes with victims/targets inside

Simulated Victims: 4 per arena, 12 total

- The chair will place victims in two high and two low boxes per arena, in different locations each round.
- Signs of life: form, heat, motion, sound, and/or CO2
- “Trapped” are in boxes open on top
- “Void” are in boxes open to side
- “Entombed” are in boxes with view holes
- Tumbling E's and/or hazmat labels are victim tags

Missions:

- Teams queue at paddock entry prior to scheduled start.
- 15/20/25 minute missions include robot placement at the start point and operator station setup. Each team is responsible for making sure victims are functional (heat, batteries, tags) prior to their mission start.
- Teams are allowed one operator during missions.
- Start points will be in the Yellow arena with all robots facing the same direction (“north” on your map).
- Yellow arena victims can be scored only by robots with autonomous navigation and victim identification. Operators may take over control at any time to move into the Orange and Red arenas but must return to the start point to resume autonomous searches.
- Teleoperative robots can only score Orange or Red arena victims, which are placed on both sides of the Yellow arena to encourage complete mapping.
- Resets allow fixing/replacing the robot at the start point but loss of accumulated victims, maps, and time.
- Bumping penalties are assessed if the administrator must replace/fix arena elements prior to next mission.
- GeoTiff map formats get full scores for map quality and will be compared to ground truth for accuracy.
- Highest cumulative scores from 7-10 missions will be awarded 1st, 2nd, 3rd place awards.
- Best-In-Class awards will be given to **individual robots** that do the following during all missions:
 - Autonomy: Find the most Yellow arena victims
 - Mobility: Find the most Red arena victims